

American Fruit Grower

WESTERN EDITION
JUNE • 1957



We are learning new things about
irrigating fruit trees... See page 10

• IRRIGATION ISSUE •

NEW

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There's a great new Golden Anniversary INTERNATIONAL Truck for every farm hauling job. Pickups, platforms, stakes . . . everything up to 33,000 lbs. GVW. Every one is "Action-Styled,"

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Michigan growers report: "ORTHOCIDE (captan) IN AN ORTHO PROGRAM MEANS MORE PROFIT"



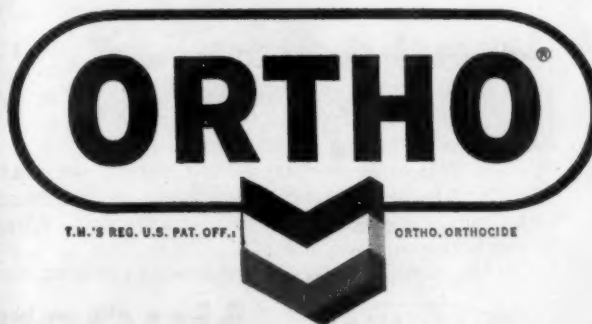
"We have followed an ORTHOCIDE program for two years and have never been so well satisfied," says Mr. Robert J. Kline, apple grower of Grand Rapids, Mich., pictured with his son Danny and daughter Cheryl. "Results have been superior keeping quality, nearly

100% scab control, superior finish, and best of all, regular bearing," Mr. Kline reports. "The ORTHOCIDE program has meant greater profits to us due to a larger percentage of No. 1 fruit. It's the most economical program we have ever used."

Use ORTHOCIDE in a complete ORTHO program for best results!

Only ORTHOCIDE, a superior formulation of captan, made exclusively by its developer, California Spray-Chemical Corp., provides: (1) exceptionally fine particle sizes. (2) better sticking, wetting, and spreading agents. (3) superior carrying agents. (4) compatibility with the full ORTHO line of insect and disease control products.

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SPREAD NUGREEN®

—feed nitrogen at the rate needed for steady, season-long growth and top yields of high-quality fruit. It's concentrated, 45% nitrogen... resists leaching and is readily available. And "NuGreen" aids decay of plant residues and cover crops.



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—supply yield-boosting nitrogen through roots. "NuGreen" is readily soluble in water and yet it won't leach out of the root zone, stays where needed for efficient nitrogen performance.



You gain with Du Pont "NuGreen" because it feeds nitrogen for higher yields of better fruit and can be applied efficiently by whatever method best suits your operations. You save time and labor with "NuGreen" because you handle less material per unit of nitrogen applied. "NuGreen" comes in 80-lb. bags—in free-flowing shot form. Order your supply of Du Pont "NuGreen" soon... it's your best buy in supplemental nitrogen.

E. I. du Pont de Nemours & Co. (Inc.), Polychemicals Department, Wilmington 98, Del.



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...THROUGH CHEMISTRY

NUGREEN®

FERTILIZER COMPOUND

—it's concentrated 45% nitrogen

American Fruit Grower

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The Only National Fruit Publication

Vol. 77 JUNE, 1957 No. 6

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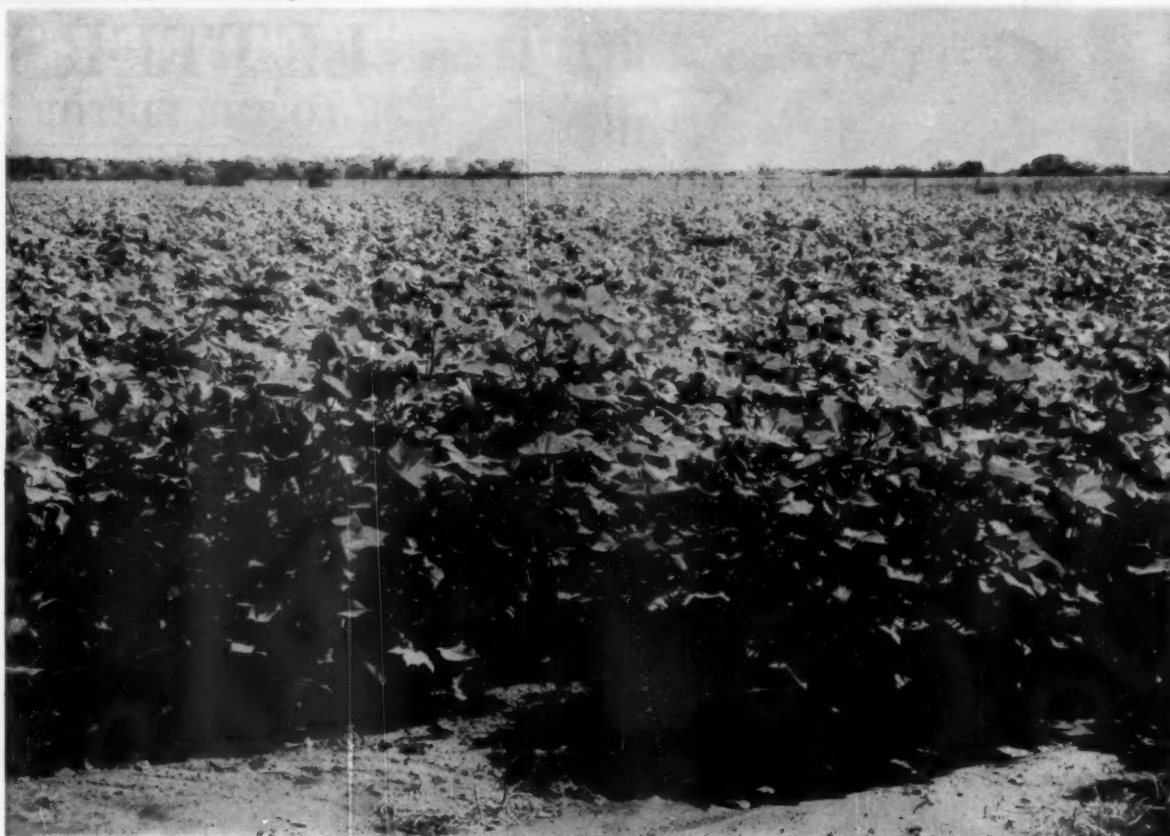
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AMERICAN FRUIT GROWER



Bumper Crops Without Rainfall!

Two Crops Per Year With Sprinkler Irrigation . . .

ON HIS FARM in Charlotte, Texas, Lawrence M. Finch now gets two bumper crops of peanuts and one cotton crop a year. According to Mr. Finch, rain is a real problem — it rains but two or three times a year. And — many, many previous crops failed, due to a lack of water.

After the installation of sprinkler irrigation by Southern Engine & Pump Co. of San Antonio, Texas, yields were really good! The system uses a deep well pump to fill a

pond. From there, a Marlow pump pushes the water (at 55 pounds pressure) through 1,740 feet of 7-inch main, 1,160 feet of 5-inch lateral and 1,160 feet of 4-inch lateral. Water is applied to the fields through 114 sprinkler heads and rainfall is no longer a problem. If you'd like more information on Marlow sprinkler irrigation pumps . . . and how they can help you, write today for the name of your Marlow dealer.



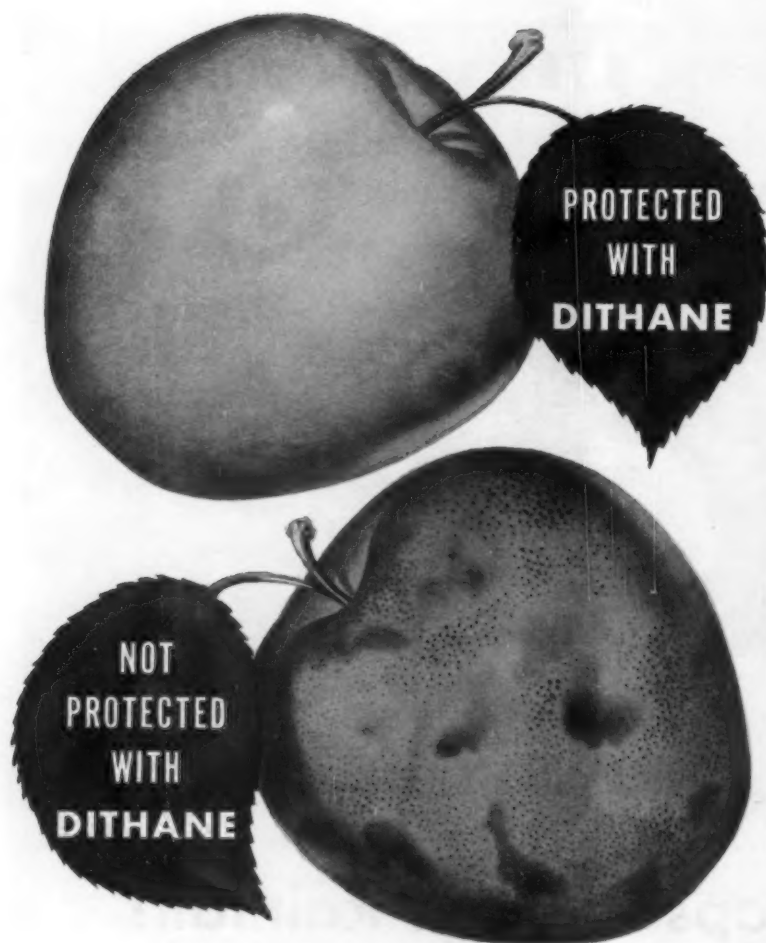
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BELL & GOSSETT CO.**

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Experiment station tests in the Cumberland-Shenandoah Valley demonstrated that after spraying, DITHANE Z-78 maintains its effectiveness against sooty blotch and fly speck longer than captan. As a result of the higher resistance to deterioration shown by DITHANE, apples sprayed with it stayed free of disease as much as 50% longer than those sprayed with captan.

When used in cover sprays, DITHANE Z-78 also gives first-rate protection from apple blotch, Brooks spot, rot diseases, and late season scab. It does not harm fruit, foliage or sprayer operators when used as recommended. So be sure to spray DITHANE Z-78 this summer. It's recommended by all important apple-growing states where late summer diseases are a problem.

DITHANE Z-78

protects apples longer from summer diseases

DITHANE is a trade-mark,
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LETTERS TO THE EDITOR

Solution to Coloring Problem

Dear Editor:

I was interested in reading the Letter to the Editor from Lawrence Pogue about a way to remove leaves from an apple tree to facilitate fruit coloring and fruit harvesting. As Mr. Pogue has indicated, fruit coloring can be increased by defoliation but there is much evidence to support greater winter injury on premature defoliated trees. It was for this reason that several color-promoting materials were eliminated from the list of Dr. D. G. White (formerly of Pennsylvania and now of Oklahoma A. & M.) in his color investigations.

A possible solution to the coloring problem of Mr. Pogue would be to plant red mutations of his present varieties. This seems to be the best answer to greater red color in our apples.
University Park, Pa. Loren D. Tukey

Santa Clara Prune

Dear Editor:

I noticed the item about the Santa Clara prune in your Question Box. The term Santa Clara prune has been used by dried fruit packers and the food distribution trade for probably three-quarters of a century to designate French prunes grown and dried in the Santa Clara Valley. The term, of course, is a trade name and while, generally speaking, it has no reference to a prune variety, it is understood by the trade to apply to the French prune (Agen).

In recent years there has been a tendency to supplant the term Santa Clara prune with the term, Three-District prune. This applies to French prunes grown in the three coastal valleys: Santa Clara, Napa, and Sonoma. Such designation is understood by the trade to indicate a prune of superior quality.

San Jose, Calif.

Robert Couchman, Publisher
California Fruit News

Dear Editor:

The Santa Clara prune that is used extensively here for drying would be the Petite d'Agen or French prune which can be supplied by most central California nurseries or Leonard Coates Nursery, Santa Clara, Calif.

Mountain View, Calif.

L. L. Elliott

Young Fruit Grower Writes

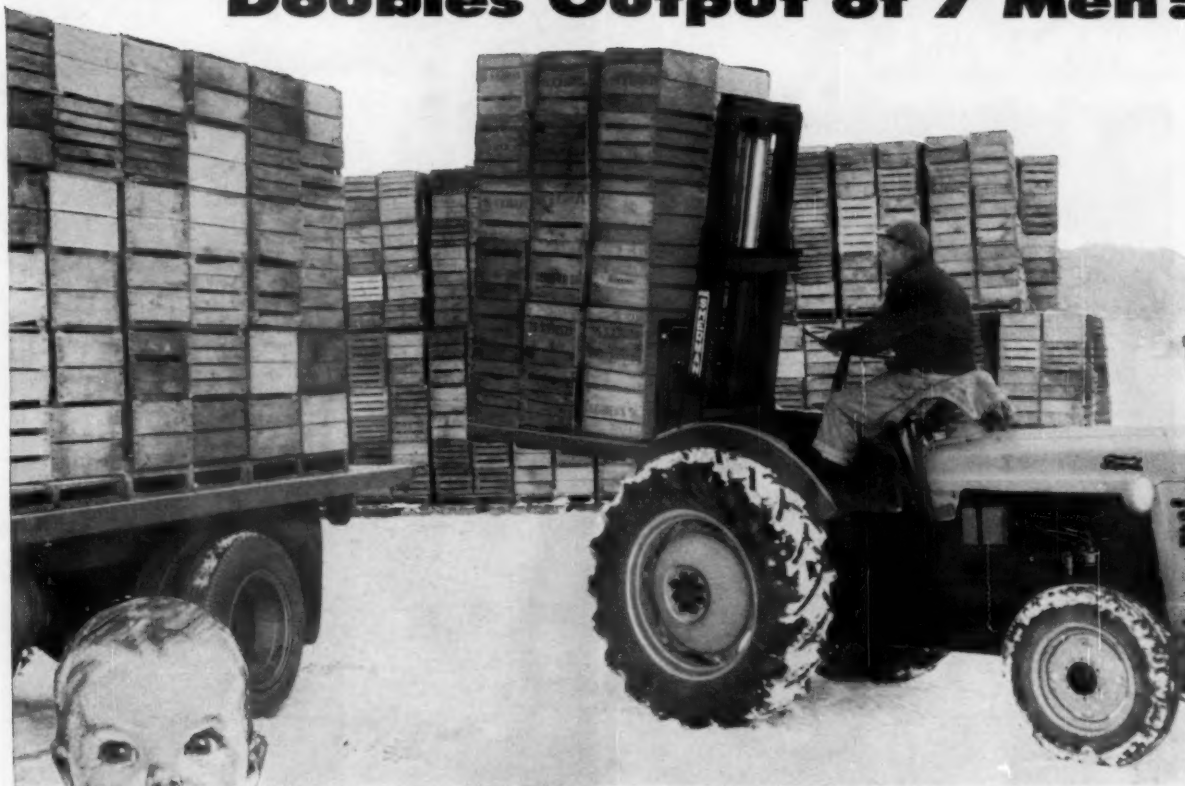
Dear Editor:

I have been reading and enjoying your good magazine since starting in the orchard business some six years ago. I now own two farms comprising roughly 140 acres of orchards. Many of the tips found in your magazine, together with my work at Cornell, have helped to make this venture a profitable and enjoyable one. I particularly like Mr. Stevens' articles. I'm a young veteran digging hard to get established in an exacting business. His thoughts are helpful in keeping a sense of balance and humor in trying circumstances.

My congratulations again on a fine magazine.
Plattsburg, N. Y. William H. Duffield
Duffield Orchards

AMERICAN FRUIT GROWER

Sherman Fork Lift with 2 Men Doubles Output of 7 Men!



Unloads 6,720 Crates Daily at Gerber's Baby Food Plant

It formerly took seven men to unload and stack 3,360 field crates a day. Now this work output is *doubled, and only two men do the job.* The other five men have gone to other shipping department jobs.

That's the enthusiastic report from The Gerber Products Company at Fremont, Michigan, since a Sherman Fork Lift was put into service there. It cut the cost of this multi-man sized handling job to the bone.

The popularity of Gerber's delectables for the tiny folk was at the base of the problem. Approximately 150,000 crates are in continual use. Con-

ventional equipment can handle the crates in the paved shipping areas, but in the orchards and the storage fields the Shermans are required because of their ability to negotiate the rough terrain.

Gerber officials looked at the Sherman Fork Lift's capacity to lift 4000 pounds to a height of ten feet and to operate with little maintenance. They gave it a 30-day trial at the tough task and it sold itself, literally, when actual dollar comparisons were made. Gerber's now has three Sherman Fork Lifts in use.

The Sherman Fork Lift
Is sold and serviced
by your local
FORD TRACTOR DEALER

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Sherman Products, Inc.,
by K-D Mfg. Co., Cleburne, Texas

2103



WE PLAN...YOU PROFIT

IRRIGATION pays big returns. Irrigation is a big investment. There are risks, mainly in system efficiency.

Any pipe, any coupler, any sprinkler, any pump, when put together, will likely function. How well they function is a question. How costly is a question. How dependably is a question. Any question on the wrong ledger side is expensive. Reduce the risk. Irrigate confidently with a Gorman-Rupp dealer's engineered system, designed for farm profit.

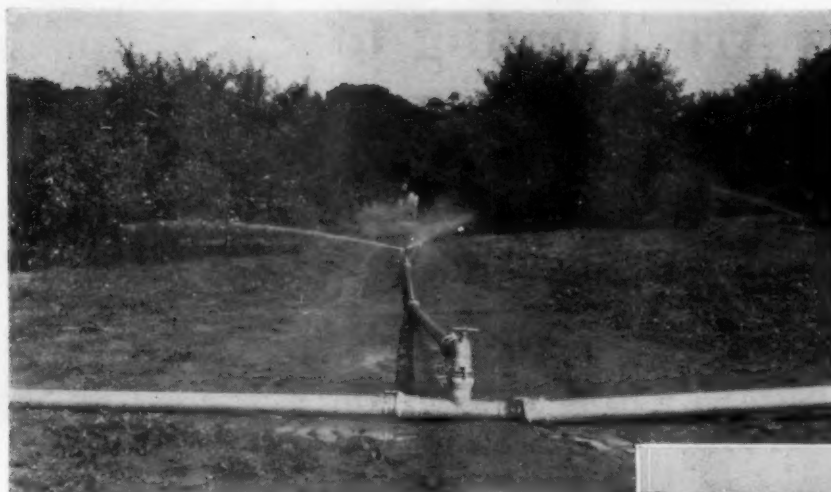
When a Gorman-Rupp dealer sells an irrigation pump, he usually designs the complete system in which it will be used. He tailors this system to water source, land contours, crops, soil, acreage, possible expansion, expected area rainfall . . . to name just a few factors.

It takes a lot of study, a lot of knowledge and practical experience. It pays off for the farmer. If you are considering irrigation, see your Gorman-Rupp Pump dealer. He offers irrigation systems fitted exactly to your needs.

Mr. Sterling Evans, President, Evans Orchard Supply Co., Kansas City, Missouri, says, "We select Gorman-Rupp Pumps because (1) we can depend on them to deliver the gallonage and pressure shown in their specifications (2) they give dependable, efficient operation (3) they are easily serviced (4) The Gorman-Rupp Company is fair in its dealings and (5) we get prompt shipment on both original pump shipments and repair parts."

THE GORMAN-RUPP COMPANY

305 Bowman Street • Mansfield, Ohio



Orchard irrigation with under-tree sprinklers (above) and farm pond (right) used as source of water for orchard in southern Pennsylvania.

American
Fruit Grower

• Fruit for Health •



SPRINKLER

Irrigation

**What you need to know to determine
cost of installation and operation**

By F. W. PEIKERT
Pennsylvania State University

IF you are looking into the possibilities of sprinkler irrigation, you will probably be most interested in what the costs will be per year. Annual costs in the more humid parts of the country are divided approximately as follows: 50% to cover fixed charges, such as depreciation and interest, 30% for labor, and 20% for power. These factors should be kept in mind in the design of your system.

Your best assurance of getting a system for the lowest annual operating cost and suited to your needs is by selecting a reliable dealer. You must, however, work with him to furnish certain needed information.

If you plan to irrigate an orchard, one of the early decisions is on the type of sprinklers to use. The choice is between under-tree sprinklers spaced 20 to 40 feet apart in the line or the large-volume gun that applies the water over the top of the trees and covers up to an acre per setting.

The under-tree sprinklers are suited to all soil types. Because of low application rates, they can be

used on tight soils where the water is taken up slowly. They operate at low pressures (around 20 to 30 pounds per square inch) and give rather uniform distribution of water. With these sprinklers great flexibility of system design is possible.

The large-volume sprinkler is preferred by some because of its wide coverage, requiring fewer settings. Its precipitation rate is about $\frac{3}{4}$ inch or more per hour. It shouldn't be recommended on soils that do not take water at such high rate. The gun requires an operating pressure of about 100 pounds per square inch, and therefore the power requirements are higher than with small sprinklers. Uniformity of distribution may be affected by wind.

If soil conditions permit a high water intake rate, the dealer might work up layouts for both types of sprinkler and determine which will be the most economical.

Here are some of the considerations in keeping down investment per acre.

Have your water supply as close as possible. Piping water long distances adds greatly to the cost. In drilling a well or constructing a



Pumping water, using tractor power take-off.

pond, choose the most central location that can be worked out. Within limits of your water supply, irrigate as many acres per season as might benefit from added water. In addition to fruit, consider irrigation for hay, pasture, or field crops.

Look into the possibilities of using the different sources of power, such as gasoline or diesel engine, farm tractor, or electric motor. A power take-off pump driven by your present tractor may be suitable, if the power requirements are within the limits of your tractor, and if you are sure of having the tractor available whenever irrigation is needed.

Do not try to cut first cost by getting pipe smaller than indicated by good design. Poor performance will result, and will add to your power costs. Your dealer has information on the proper size of pipe to use.

Labor requirements depend on the particular layout of the system. If

(Continued on page 37)

Why Growers Are Turning to **SPRINKLERS for TREE FRUITS**



Lifting water 239 feet from near-by stream to Beasley Orchards at Roanoke, Va. Pump is run by a 150 h.p. diesel engine (see close-up view at right).



In VIRGINIA To Eliminate Crop Failures

By **FRED R. DREILING**
Virginia Polytechnic Institute

SINCE 1950, we have had five years of serious drought in many areas of Virginia. Many crops of peaches and apples have been left on the trees because of small size and poor quality.

A recent survey of sprinkler irrigation systems in Virginia shows that fruit growers have been doing something about the drought problem. More than 1500 acres of apples and peaches can now be sprinkler-irrigated.

Farm ponds are the principal source of water in six out of 10 irrigated orchards, and streams furnish water for five out of every ten plantings. About 60% of the installations are operated by gasoline-powered engines.

Most growers are using short risers with low-angle nozzles.

Tom Beasley, Jr., of Roanoke, who uses sprinkler irrigation on 150 acres of fruit, started with a small system in 1938, using a gasoline engine. Tom is now using a 150 h.p. diesel and lifting water 239 feet to his orchards.

He figures that the present installation paid for itself in one year's operation. During the severe drought

years of 1954 and 1956, irrigation increased the size of his peaches and apples by $\frac{1}{4}$ -inch to $\frac{3}{4}$ -inch in diameter.

The Graves Brothers Orchards at Syria used sprinkler irrigation on 300 acres of apples and peaches. Jack Graves was asked one year after a severe drought what he thought of their irrigation system. Jack replied, "It sure saved us on peaches this year." Peaches were noted to respond especially well to irrigation during the last two or three weeks of growth.

R. G. Williams irrigates 20 acres of orchard near Wytheville. "Mr. Bob" is averaging 500 bushels of peaches to the acre.

Morris and Raymond Crumpacker, of Bonsack, irrigate roughly 100 acres of peaches and 100 acres of apples. They have been irrigating since 1953. Morris is quick to say: "Sprinkler irrigation saved our peach crop last year. We couldn't pack out anything above 2 inches on the nonirrigated peaches."

They get their source of power from a gasoline engine and an electric motor, but are now switching everything over to electricity, claiming it is far more dependable and less trouble.

The water supply is obtained by directing the flow of a near-by stream into several ponds and also from a 6-acre lake.

In the 1956 season, which was their most severe drought on record, peaches from the irrigated orchards brought \$3.25 a bushel and those from the nonirrigated orchards only \$1.75. The soil management program on peaches is to keep the orchard in sod using a Culti-Cutter periodically during the growing season.

In a number of sprinkler-irrigated orchards we find that the growers have increased their application of nitrogen to a slight degree. Several growers indicate lighter cultivation since they have gone into sprinkler irrigation.

We find that excessive tree wetting from sprinkler irrigation can be a hazard in the peach orchards along the eastern seaboard of Virginia. There are indications that this will aggravate brown rot and possibly bacterial leaf spot. However, there is a need for additional irrigation in this section, particularly on the early-maturing peach varieties. The more rapid rate of fruit development of these early-maturing varieties makes



Sprinklers in a Washington apple orchard (above) and a two-year-old Moorpark apricot orchard (right). Sprinkler heads are easily adjusted.



In WASHINGTON To Save Time, Labor, Water!

By **RICHARD BARTRAM**
County Extension Agent, Wenatchee

them more susceptible to dry weather.

With new practices problems will arise. One has been the lack of uniform water pressure along the lateral lines in sloping orchards. Excess water collects in low depressions where it is not needed as much and there is not enough water at the higher elevations where there is usually a greater need. A few growers have incorporated subsoiling to improve water intake, while others are debating the practicability of this practice where their soils have an impervious layer.

Some growers believe that it does not pay to irrigate apples on the better soils of Virginia. The experiences of S. R. Levering, of Ararat, would support this theory.

The Levering apple orchards are on a black porter loam, and in the 48-year history of this orchard only in 1930 was the crop seriously reduced by drought. During the drought years from 1950 to 1956 apple size was good, while fruit in many orchards in the area was left on the trees due to poor size and quality. **THE END.**

HALF of the orchards in central Washington have been converted from rill or ditch irrigation to sprinkler irrigation in the past 10 years. This means that more than 30,000 acres of tree fruits are now under sprinkler irrigation.

There are at least three reasons for this change to sprinklers. Many orchards are on steep slopes or very light soils where it is nearly impossible to irrigate with rills without causing serious soil movement. Sprinklers require less time and labor to manage, and carefully operated sprinkler irrigation permits more efficient use of water supply.

The change has proven generally satisfactory and has definite advantages under some orchard conditions. However, certain problems have developed with the change.

Most of the older irrigation systems in central Washington were designed to deliver the minimum amount of water needed during the

warmest season on a full bearing orchard with cover crop. The newer sprinkler systems are engineered with the capacity to maintain adequate soil moisture during the warmest season. The engineer then adds 20 or 25% to this capacity to insure against error and unusually dry years.

This more efficient system can result in overirrigation if it is not managed efficiently.

Another effect of changing from rill irrigation to sprinklers is the increased response of cover crops. The entire soil surface is covered by sprinklers. Usually native grasses grow more vigorously and develop a sod cover. This cover is needed to hold the soil on steep slopes. It is also needed to prevent soil packing. However, the grass also becomes more competitive for nutrient elements, particularly nitrogen.

With a change in irrigation methods it is necessary to watch tree response carefully. This competitive factor with the cover crop may be overcome by increasing the nitrogen and by applying it in a 2- to 3-foot band around each tree under the outside spread of the branches. Apple trees can have a supplemental foliage spray in the early growing season.

An increase in the cover crop growth provides more food for rodents such as orchard mice and gophers. These destructive rodents often increase in population when sprinklers are installed. The rodent poisoning program usually has to be more thorough with sprinkler irrigation. **THE END.**

In MICHIGAN

To get bigger, brighter, longer-keeping apples!

See page 30

In SOUTH CAROLINA

To jump peach production 50% and increase fruit size!

See page 31

In CALIFORNIA

To control erosion and get better water penetration!

See page 32

QUEEN ELBERTA

Still Reigns Supreme

By M. J. DORSEY

By following the varieties listed for each state from the top to the bottom of the table, it will be seen that there is a pronounced swing to the early varieties in the South. There is a shift to more highly colored varieties in the early part of the crop, which we hear so much about in the trade. It should be noted, too, that in the later varieties near the Elberta season, such as Red-skin and Blake, a similar trend is evident especially in the new plantings. This trend will be shown in future surveys. Mention should be made of the fact that Red Bird, South Haven, Summercrest, Hinnens, and Salwey, all included in the 1953-1954 report, are omitted in the present summary. The new varieties which



The table also shows the total or potential volume coming on the market throughout the season from each variety. Note the dominance of Elberta in spite of the significant fairly recent rise of such varieties as Bur-

As the season advances to the point where the "set" or crop from each state can be corrected by varieties, the crop reports prepared by Harold Hartley, secretary of the National Peach Council, Carbondale, Ill., will give the seasonal picture. THE END.

	Weeks earlier than Elberta	
	8	N
	6½	C
	6	V
	6	F
	5½	G
	5	.
	4½	E
	4½	I
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	4½	O
	3½	S
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	0	
	¾ ^a	
	¾ ^b	
	¾ ^c	
	¾ ^d	
	¾ ^e	
	¾ ^f	
+In		

By M. J. DORSEY, Urbana, Ill.

State Estimates in Thousand Bushels—Feb. 18, 1957, Guesstimate of National Peach Council

+In production but percentage not given. *Later than Elberta. †Based on an average crop. ‡Not included in U.S. Summary.





- Good Peach Crop Expected in Southern States Despite Setbacks
- Great Lakes Cherry Group Appoints Manager

Cherry Group Appoints Manager

MICHIGAN—The Great Lakes Cherry Producers Marketing Cooperative, Inc. has appointed Fitch R. Williams, an attorney of Traverse City, Mich., as its general manager.

The marketing co-operative is an exclusive sales agent for the red tart cherries produced by its nearly 1500 members, who reside in the five states of Michigan, Wisconsin, Ohio, New York, and Pennsylvania. It was organized for the purpose of influencing the merchandising of the fruit to the ultimate consumer through marketing and distribution research and the negotiation of sales contracts with individual processors.

Mr. Williams brings to the organization 16 years of experience with the cherry industry, five of which were spent in the management of a cherry canning and cold packing plant.

Officers of the co-op are John Handy, of Sodus, Mich., president; James Oakes, of Lyndonville, N.Y., vice-president; and Bruce Lyon, of Traverse City, Mich., secretary-treasurer.—George A. McManus, Jr., Traverse City.

Worksever

TENNESSEE—A machine that may eventually eliminate capping of strawberries in the field by pickers has been invented by Dr. A. H. Morgan, of the University of Tennessee Agricultural Experiment Station, and will be in full production next year.

Four machines are being used in commercial tests this year although the university's tests already show the machines will more than live up to expectations.

New Berry Group

OREGON—With the assistance of Marvin VanCleave, Salem, president of the Oregon Strawberry Council, growers in Marion County have formed the Marion County Strawberry Growers Association. Bradford Edwards, Silverton, is president of the new group and Ben Bolton, Stayton, secretary-treasurer.

Edwards reports that the new association's first problem will be a study of the picker-harvest problem. Most of the \$1 million paid out annually for strawberry harvest in the Willamette Valley usually goes to local pickers, VanCleave reports. Crop outlook is excellent, says VanCleave.

In new plantings the Northwest and Siletz varieties are sharing prominence with the old standby, the Marshall.—Harold and Lillie Larsen.

Unprofitable Agreement

GEORGIA—Termination of the national marketing agreement and order for pecans, in effect since 1949, has been recommended by the Southeastern Pecan Growers Association. Executive committee secretary S. H. Jennings, of Dawson, reports that the agreement has not been as profitable as growers had anticipated and that in some cases growers actually had been penalized.

The association has members in Mississippi, Alabama, Georgia, Florida, and South Carolina.—Mrs. Pauline T. Stephens.

Medfly on the Way Out

FLORIDA—In April, 1956, the Mediterranean fruit fly was discovered in Florida and threatened to drastically cut the value of the state's \$400 million fruit and vegetable crops. But thanks to new research

oranges. Rate of application was one pound per 100 gallons of water.

Rather than switch from their old standby, sulfur, on a wholesale basis, Miss Fisher suggests growers try the new spray on a small-scale basis.

Russeting, scientists have believed, was caused by the citrus rust mite. Miss Fisher's tests indicate that a fungus may be the cause.

Big Freeze

ARKANSAS—The big news of the moment is the freeze that occurred the night of April 12, almost completely destroying the peach crop in the northwest section of the state and in the Clarksville-Russellville area. However, peaches in the Crowley's Ridge area in eastern Arkansas, and the Nashville district in southwestern Arkansas, give hope of excellent prospects.

Rainfall is above normal and soil moisture should be sufficient to carry us into early summer.—Earl J. Allen, Sec'y, Fayetteville.

Best Since 1951

SOUTH CAROLINA—Crop prospects for the state are the best they have been since 1951. The heavily planted Piedmont has a full crop set on all commercial varieties. The abnormally low number of chilling hours during the winter of 1956-57 has not adversely affected this section.

However, the Sandhills, the Ridge, and South Central South Carolina, which comprise 30 to 35% of the total peach production of the state, was seriously affected through the lack of an adequate number of chilling hours. It is doubtful whether the

(Continued on page 16)

FRUIT PEST HANDBOOK

(SIXTIETH OF A SERIES)

ROSE CHAFER

THE rose chafer is a gray, long-legged, slender beetle about one-half inch long that sometimes appears in large numbers in vineyards in eastern United States, southeastern Canada and west to Colorado and Texas. It occurs most commonly in areas having light sandy soils. Injury to grapes is due to the feeding of the adults on the foliage, blossoms, and newly set berries. The beetles are general feeders and injure many kinds of fruits and ornamental plants.

The rose chafer overwinters as a larva in the soil, the larva being a small white grub. It feeds on the roots of grasses and weeds. Pupation occurs in May and the adults emerge late in May and early in June. Adults feed for three or four weeks and during that time return to the soil to deposit eggs. The eggs hatch in two to three weeks and the young larvae remain in the soil to feed. There is but one generation a year.

Control. Spray the vines with DDT when the adults first appear in the vineyard, using 2 pounds of a 50% wettable powder in 100 gallons of water. Look for the beetles about the time Concord grapes are in bloom.—Howard Baker, USDA.



Rose chafer adult. Courtesy USDA.

Control both scab and rust
on all apple varieties



These six varieties were sprayed with Du Pont's new all-variety fungicide, "Thylate."

Spray with **THYLATE**[®]

THIRAM FUNGICIDE

Du Pont's all-variety apple fungicide

"Thylate" has a place in any spray program, especially if you:

- 1 — have large blocks of Golden Delicious or mixed plantings with Golden Delicious.
- 2 — want to control scab or rust early and without russetting.

- 3 — want to combine a scab and rust preventive with mercury curatives or with sulfur.

- 4 — need a buffer spray between sulfur sprays and other summer fungicides.

Du Pont "Thylate" does not cause russetting of Golden Delicious, and its white residue allows fine finish on all varieties!

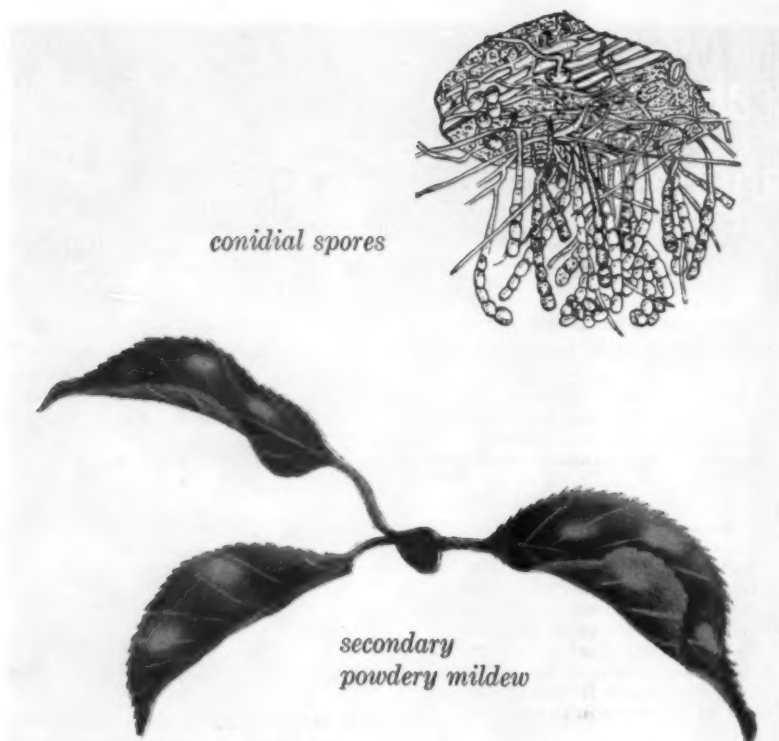
NOW! Besides controlling scab and rust, "Thylate" is registered for controlling all these other apple diseases: black rot, fly speck, sooty blotch, Brook's spot, apple blotch, bitter rot, botryosphaeria spot.



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Preventable?... Yes, with **KARATHANE WD**

Here you see how powdery mildew spreads during the summer when conidial spores are carried from infected terminals to other foliage. This secondary mildew, as well as the infection of new terminal buds, can be prevented by using KARATHANE WD in cover sprays. In orchards with a history of powdery mildew, spray KARATHANE WD until new terminal growth is completed . . . and then start spraying next year when buds break. Other orchards should be sprayed at the first sign of powdery mildew to prevent its build-up. When applied as recommended, KARATHANE WD will not harm fruit or foliage.

REMINDER—Since mildewed surfaces are hard to wet, add TRITON B-1956 spreader-stickert to KARATHANE sprays. RHOthane helps eliminate second brood red banded leaf roller.

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CHILLY PEACHES

This photo, taken in Little Rock, Ark., at 7:00 A.M., April 13, shows Elberta peaches covered with ice as the result of rain and sleet on April 12 when the temperature dropped to 32 degrees. —Fred F. Jungkind

STATE NEWS

(Continued from page 14)

varieties with long chilling requirements will produce more than a third of a crop —only the short chillers are performing normally.—Roy J. Ferree, *Extension Horticulturist, Clemson.*

Quality Crop

NORTH CAROLINA—It looks like there'll be a good crop of peaches from the Sandhill area. Growers are estimating June 1 as the date for the earliest variety. Irrigation is being supplied, and hydrocooling equipment is being made ready for another crop of high grade fruit.—Melvin H. Kolbe, *Sec'y, Raleigh.*

Not Enough Chilling

MISSISSIPPI—Although the peach crop escaped serious damage from late frosts, the crop has been affected in certain sections by two unusual conditions: 1) Severe infection of peach leaf curl on unsprayed trees in the northern one-third of the state. 2) In other areas, especially in the southern section, most varieties of peaches bloomed about four weeks later than usual and have failed to leaf out normally due to an insufficient number of chilling hours.

In the future, growers in the southern half of the state should plant varieties requiring 750 hours or less of chilling temperatures. In extreme south Mississippi, the new varieties requiring only 650 chilling hours should be largely depended upon for regular crops.

The crop in Central and North Mississippi is promising, and will be near normal except in orchards in which severe leaf shedding occurs as the result of peach leaf curl.

In general, the apple, pear, plum, and strawberry crops are good.—Chesley Hines, *Extension Horticulturist, State College.*

Crop Prospects

VIRGINIA—Fruit prospects are excellent except for peaches in low places in southwest Virginia, and in Timberville and Mr. Jackson. Freeze in April damaged cherries in northern Virginia. Easter warm spell had fruit developing in four days that would normally take two to three weeks. **WEST VIRGINIA**—Cherries seriously hurt by freezing; peaches badly hurt in spots; apple bud damage not significant. **MARYLAND**—A heavy bud-set and bloom developed on both apples and peaches. Record heat temperature registered on April 28, just two weeks after the last freezing night when smudge pots were used. Buds almost exploded in the sudden heat that

(Continued on page 37)

AMERICAN FRUIT GROWER

Announcing two new 4-Wheel-Drives at record low prices!

Yours now . . . new full-sized low-tonnage Dodge Power Giants . . . only trucks of the low-priced 3 with both off-road pull and on-road go!

Here are two new models of the only low-tonnage 4-wheel-drive trucks offered by the low-priced three. They're built to carry a real profit-packed load, with G.V.W.'s to 8,000 pounds . . . yet they're priced right down your alley.

You get the extra dig-in traction of four driving wheels plus the power, payload capacity and exclusive features of a regular Dodge Power Giant. Take your choice of body styles—pick-up, stake or Town Wagon—with V-8

or 6 power . . . and you can even enjoy the extra convenience of a push-button automatic transmission.*

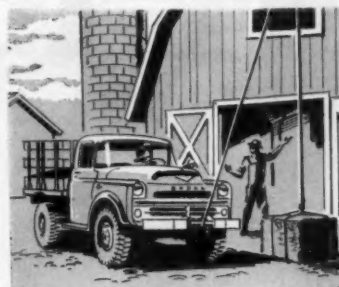
These Dodge 4-wheel-drive Power Giants can go practically anywhere off the road, and with a flick of a lever, head down the highway with 2-wheel-drive ease. Add a few accessories and you've got mobile power to lick almost any farm job that a tractor can do. But find out for yourself. Get the details from your dealer the next time you're in town.

*Available on all low-tonnage and Forward-Control models.

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HAUL FULL-SIZED LOADS in your choice of full-sized bodies. Use power accessories to help you load or unload anywhere on your farm.



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Leaves interior clear
and free of bruising
projections—adds to
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applied, permits
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Sturdy skid bases
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CALENDAR OF COMING MEETINGS & EXHIBITS

June 13—Illinois Summer Orchard Day, at Eckert Orchard Association, Belleville.—Harold J. Hartley, Sec'y, Carbondale.

June 13—Small Fruits Day, Ohio Agricultural Experiment Station, Wooster.

June 17-20—National Apple Institute annual meeting, St. Joseph, Mich.—Truman Nold, Exec. Sec'y, 726 Jackson Pl., Washington 6, D. C.

Growers attending the National Apple Institute meeting, June 17-19, at Whitcomb Hotel, St. Joseph, Mich., will have an opportunity to observe an excellent cross-section of the diversity of the Michigan fruit production program by taking part in the tour planned for June 19. Jerry Mandigo, district horticultural agent in southwestern Michigan, reports the tour will include stops at Southwestern Michigan Cold Storage Association Plant, at Sodus, a strawberry farm in the Keeler area, Barnetts Packing Plant to observe strawberry processing, Hill Top Orchards, at Hartford, to observe commercial dwarfing rootstock plantings, Triangle Blueberry Farm and Sorden Brothers Orchards, both at South Haven.—R. E. Mitchell, Asst. Sec'y, Mich. State Hort. Society, East Lansing.

June 20-22—South Dakota State Horticultural Society annual meeting with S.D. Federated Garden Clubs, Pierre.—W. A. Simmons, Sec'y, Sioux Falls.

June 26—New York and New England Apple Institute joint meeting, University of Connecticut, Storrs.—Sherman P. Hollister, Sec'y, Storrs.

June 27—Ohio Apple Institute annual meeting, Dan Simmons & Sons Peace Valley Orchards, near Rogers, Columbiana County.—Howard M. Wells, Mgr., McArthur.

Indiana Horticultural Society summer meetings: July 10—Meet with Eastern Indiana Horticultural Society at Martin Davis Orchard, Muncie, and tour of other orchards in Muncie area. **July 11**—Tour Ernest Downing Orchards, New Madison, Ohio.—George A. Adrian, Sec'y, R.R. 4, Box 54-M, Indianapolis.

July 18—Four-state (Md., Va., W. Va., Pa.) joint summer meeting, Hancock, Md. Host: Maryland State Horticultural Society.—A. F. Vierheller, Sec'y, College Park, Md.

July 18—Massachusetts Fruit Growers Association summer meeting at home of President Jesse L. Rice, Rice Fruit Farm, Wilbraham.—A. P. French, Sec'y, Amherst.

Aug. 5-7—International Apple Association annual convention, Netherland-Hilton Hotel, Cincinnati. Exhibit space available. Fred W. Burrows, Exec. Vice-Pres., 1302 18th St., N.W., Washington, D. C.

Aug. 13-14—Ohio Pesticide Institute annual summer meeting, Ohio Agricultural Experiment Station, Wooster.—J. D. Wilson, Sec'y, Wooster.

Aug. 15—Ohio Orchard Day, Ohio Agricultural Experiment Station, Wooster.

Aug. 17—Summer Field Day, Kansas State College Horticultural farm, Manhattan.—William E. Amstein, Sec'y, Manhattan.

Aug. 24-28—United Fresh Fruit and Vegetable Association's ninth annual conference, Chase Hotel, St. Louis, Mo.—Association headquarters: 777 14th St., N.W., Washington, D. C.

Sept. 15-18—Produce Packaging Association 7th annual conference and exposition, Shoreham Hotel, Washington, D. C.

Sept. 16-18—Texas Citrus and Vegetable Growers and Shippers 15th annual convention, Statler-Hilton Hotel, Dallas.—Austin E. Anson, Exec. Mgr., 306 East Jackson, Harlingen.

Oct. 9-11—Florida Fruit & Vegetable Association 14th annual convention, Hotel Fontainebleau, Miami Beach.—Florida Fruit & Vegetable Assoc., 4401 E. Colonial Drive, Orlando.

Oct. 24-Nov. 2—National Apple Week.—International Apple Association, Inc., 1302 18th Street, N.W., Washington 6, D. C.

Nov. 14-16—Western Growers Association 32nd annual convention, Hotel del Coronado, Coronado, Calif. Headquarters: 606 So. Hill St., Los Angeles 14, Calif.

Nov. 25-26—Illinois State Horticultural Society and Illinois Fruit Council annual meeting, Abraham Lincoln Hotel, Springfield.—Harold J. Hartley, Sec'y, Carbondale.

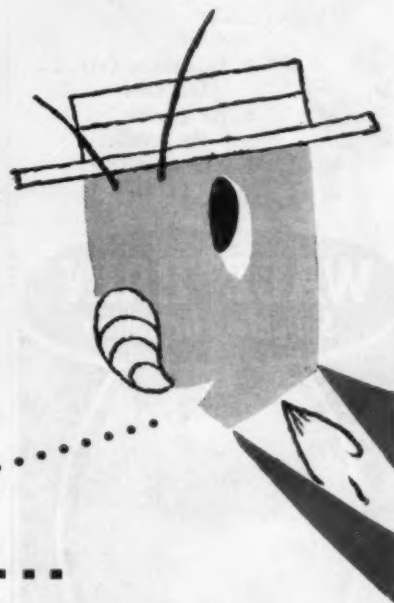
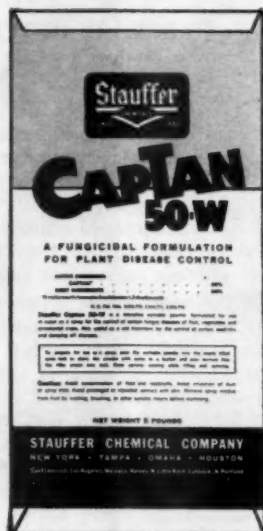
Dec. 6-7—Utah State Horticultural Society annual meeting, Hotel Utah, Salt Lake City.—Anson B. Call, Sec'y, Logan.

Jan. 7-8, 1958—North Carolina Apple Growers Association annual meeting, Skyland Hotel, Hendersonville.—R. N. Barber, Jr., Sec'y, Waynesville.

Jan. 13-15—Virginia State Horticultural Society annual meeting, Hotel Roanoke, Roanoke.—John F. Watson, Sec'y, P. O. Box 718, Staunton.

Jan. 24-25—Western Colorado Horticultural Society annual meeting, Grand Junction.—Raleigh B. Flanders, Sec'y, Box 487, Grand Junction.

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from now to harvest!"**

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And for insect troubles? Rely on Stauffer's "Flow-able" Parathion 400. It's powerful . . . a water emulsion . . . no oils or solvents . . . safe for plants . . . no abrasive solids . . . harmless to spraying equipment. Truly economical and exclusive with Stauffer dealers. For these and other Stauffer Agricultural Chemicals see your Stauffer dealer.

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WATER RIGHTS

Check your water rights before you invest in irrigation

By CHARLES C. BUTLER

Director, Land and Water Use
American Farm Bureau Federation

DEMANDS for water are greater than they have ever been. Each year we are using more water in our homes, in our factories, and on our farms. Our use of this life-giving resource has increased almost seven-fold since the turn of the century. It will increase even more rapidly in future years.

The greatest single use of water in the United States today is for irrigation. About half of the fresh water used annually is for this purpose. Irrigation water demands are rapidly increasing, especially in the 31 humid states where approximately 3 million acres are now irrigated annually. Many states in this area have had a tremendous increase in irrigated acreage since 1949. For example, Mississippi has increased from 5,000 to 132,000; Ohio, 5,000 to 25,000, and Tennessee, from 1,000 to 22,000 acres.

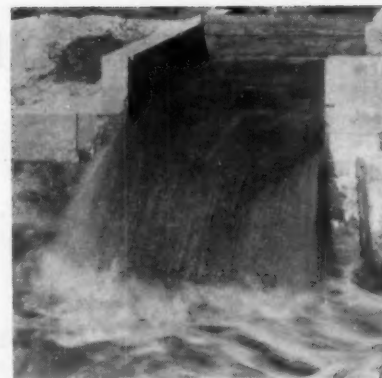
These increased demands are not confined to agriculture. All of the various water users are competing to one degree or another for the available supplies.

Water rights are not well defined over the entire country. They vary from state to state and are vastly different in the humid eastern states than in the arid states of the West.

In the West most water rights are state legislative acts and are based on the beneficial use of the water. If a farmer has a water right, it is usually a good right, and as long as he uses the water beneficially, it can't be taken away from him. This type of water right is called an appropriative right. It is specific as to time, place, and amount. However, the first or prior user of water for beneficial purposes has the best right. In a water shortage period, any reduction in supply to users is in reverse of the order in which users obtain their rights. This type of water right adds stability to an irrigation enterprise and provides a great deal of financial security for the investment.

Riparian Rights

In the eastern states most water rights are based on court decisions or on common law. Rights to the use of water are based on land



Water—who's got the right to use it?

ownership and are known as riparian rights. Under this type of law owners of land touching a common stream or body of water have equal rights to the use of the water. Owners of land not touching a stream or body of water have no right to use the water for any purpose.

Each riparian owner has the right to expect the water in a stream to flow past his land "substantially unimpaired in quality and undiminished in quantity." However, the riparian owner may make a reasonable use of water for domestic and other purposes. All domestic demands on a stream must be satisfied before nondomestic uses may be made. The big question is, "What is a reasonable use?" Such use depends on many circumstances. In most eastern states the final answer to this question must be settled in the courts.

Under riparian law a farmer can easily run into water right troubles. His rights are not well defined, and reasonable use of water is an illusive thing. It changes with changing conditions of use, supply, and means of diversion. Investments based on this type of law are not dependable. They may be good today and of no value during the period when a farmer needs irrigation water most.

Most of the humid states have short periods of drought which seriously affect crop yields. That's why more and more farmers are becoming interested in irrigation as an integral part of the agricultural production process. It is being looked at as a production tool that eliminates the hazards of rainfall deficiency. Although this is true with most types of farming, it is especially true in fruit farming where production costs are high.

Farmers in the eastern states must do everything possible to protect their irrigation investment by making certain that they have a dependable water supply. Their source of water is limited to diffused surface

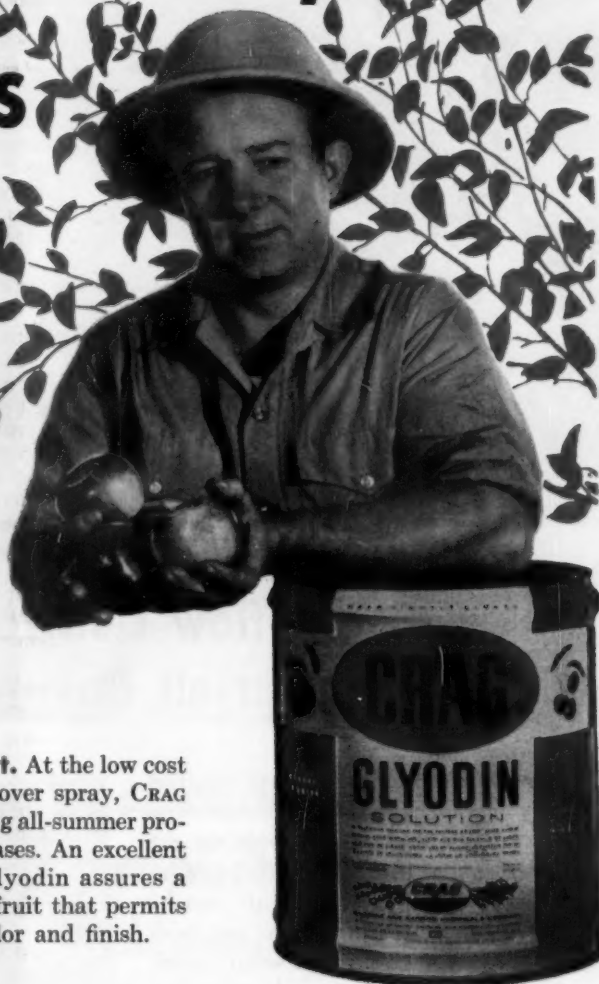
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AMERICAN FRUIT GROWER



Glyodin Pays in cover sprays

All-Season Scab Control. You get powerful protection against apple scab and summer diseases right through to harvest by using CRAG Glyodin throughout your entire spray program. This persistent scab preventive sticks tight to foliage and fruit even in prolonged rains, and controls scab, bitter rot, black rot, fly speck, sooty blotch, and Brooks spot. Ideal also to control leaf spot of red tart cherries and brown rot of peaches interplanted with apples. Use Glyodin in an extra late cover spray to avoid pinpoint scab in storage.



Top Quality at Low Cost. At the low cost of 54¢ per 100 gallons of cover spray, CRAG Glyodin provides outstanding all-summer protection against fungus diseases. An excellent spreader-sticker, CRAG Glyodin assures a smooth, protective film on fruit that permits full development of fine color and finish.

The Fungicide that Helps Control Mites and Insects

CRAG Glyodin suppresses mites, and can save three or more mite sprays a year when used in all early sprays and cover sprays. It does not harm the beneficial insects that feed on mites.

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other commonly-used fungicides. In 19 tests with 21 insecticide and miticide combinations, CRAG Glyodin increased the effectiveness of the insecticides or miticides used. Comparative tests were taken on codling moth, curculio, green apple aphid, mites, red-banded leaf roller, and rosy apple aphid.

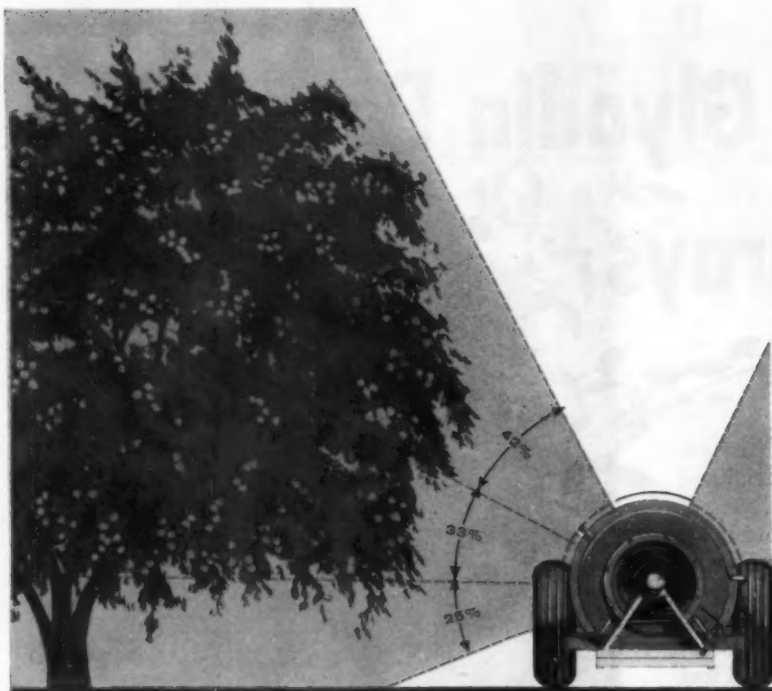
For efficiency and economy, use CRAG Glyodin right through to your last cover spray. It's the scab spray that pays more ways. See your supplier today.



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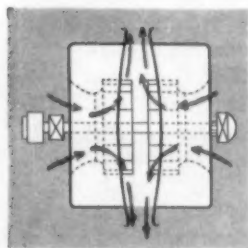
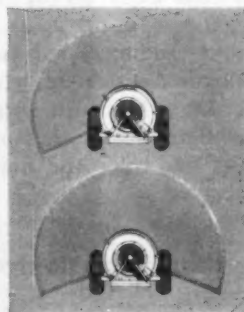
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WATER RIGHTS

(Continued from page 20)

water, a spring, a well, a lake, or a stream.

Know the Legal Risks

Diffused surface water originating on land owned by the farmer in question is probably the surest supply of irrigation water. It may be limited in quantity, but in most states a farmer may capture and use it without legal question. Likewise, a farmer may tap a spring on his own land for an irrigation water supply without legal risks, providing the capture of water is made above the point where the spring forms a stream with visible banks and bed. In general, a farmer can develop wells and use water underlying his land. However, the state may regulate the amount of water that can be pumped.

A farmer is far more apt to run into water right problems in the eastern states when he depends on

Lemons, says the USDA, contain more sugar than watermelons. Lemons have 9.8%; watermelons, 6.7%.

obtaining irrigation water from a stream or lake. Here he has only a limited legal right to water, as his right is in common with every other landowner whose land touches the stream or lake. He may not be disturbed for years, or he may be sued immediately by a riparian owner below him.

Irrigation from this source of supply is a gamble, as there may not be enough water for everyone. A riparian owner may hold his right forever, even though he doesn't use the water, thus contributing to non-beneficial use of the water which some farmer or other water user may desire to put to beneficial use.

When farmers carry out any activities relating to storing, retarding, diverting, collecting, pumping, or in any way artificially affecting the use of water, water rights are probably concerned. Legal advice should be obtained prior to undertaking these water resource development activities. The state engineer, who is usually located at the state capitol, can provide farmers with much good, sound advice relative to water resource developments.

Most of the eastern states and a number of western states are now taking steps to study their water problems and modernize their water laws. Farmers and their organizations should encourage and participate in such developments in their states.

THE END.

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Permanent "K" factor average, 0.25. Avg. density, 1.8 lbs. per cu. ft. No odor. No food value. Pleasant to work with. Fabricates with common tools. Does not crumble or settle.

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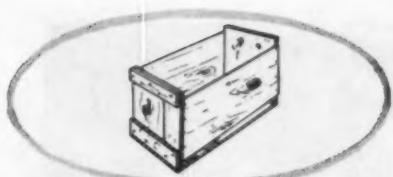


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Plastic and Aluminum Team Up for

Low-Cost Irrigation

Michigan strawberry grower finds plastic pipe works efficiently, reduces costs of irrigation system

STRAWBERRY grower John Scherer, of Keeler, Mich., has installed 6800 feet of plastic irrigation pipe to supplement his aluminum pipe.

"I can buy this plastic irrigation pipe at about a third the cost of aluminum pipe. The plastic runs about \$21.30 a hundred feet and the aluminum about \$65," explains Scherer. "That 6800 feet gives me the equivalent of 10 more aluminum laterals in my berries at a cost of about \$1200. Ten aluminum laterals would run me about \$3300."

Scherer uses the plastic pipe for sublaterals only. Regular aluminum laterals run off the main pipes. Then 90-foot lengths of the plastic pipe are hooked into the laterals to cover the entire field. This gives a 90x90-foot spacing on the sprinklers throughout the entire 27 acres of berries under irrigation.

The plastic pipe is smaller in diameter than the aluminum. Larger than a garden hose, but similar in appearance, it has a one-inch hole. The only pieces of hardware needed to hook the plastic pipe into the aluminum tubing are a nipple, coupler, and threaded T. The plastic is lighter than aluminum, weighing 18½ pounds per 100 feet.

"We just roll it up to move the pipe," says Scherer.

He also uses plastic sheeting to line his irrigation pond. By lining



—Photo courtesy Kalamazoo (Mich.) Gazette
John Scherer, Keeler, Mich., shows the plastic pipe he uses to supplement his aluminum tubing in irrigating 27 acres of strawberries. Sprinklers at the end of each 90-foot length of pipe come equipped with a spike so they can be shoved into ground wherever needed.

it with two 16x100 sheets of polyethylene (cost: about 2 cents per square foot) he slows the rate of water seepage, formerly excessive because of the sandy soil.

Scherer pumps water from his well into the near-by pond. In this way he cuts down the amount of pressure required and increases his flow 250 gallons per minute. The water is pumped out of the pond by a centrifugal pump. THE END.



—Photo courtesy Kalamazoo (Mich.) Gazette
Plastic sheeting is used to line irrigation pond, reducing seepage through the sandy soil.



Photos courtesy N. Y. State Agr. Exp. Station

How to protect your fruit against DDT and DDD-resistant insects

In '54, DDT-resistant codling moth appeared in the midwest, and later in the east.

In '55 and '56, DDD-resistant red-banded leaf roller damaged N. Y. orchards. Here's how malathion protects against these "new" pests.

Add malathion to regular summer sprays, from calyx through late cover sprays, and you'll have protection against codling moth and red-banded leaf roller, including resistant strains.

You'll have the insecticide there when eggs hatch and larvae are small and easy to control. Timing, however, is only part of the answer. The rest

is *malathion*... the phosphate insecticide you need for high kill.

Malathion stops aphids and mites at the same time that it kills the resistant pests. Add a curculio insecticide for a complete summer schedule.

Free Grower's Guide — Write American Cyanamid Co., Dept. F2, 30 Rockefeller Plaza, New York 20, N. Y.



OFFERS SAFETY IN USE—Malathion is called "one of the safest insecticides to handle" by USDA. Handling precautions required are similar to those for DDT.



SPRAY CLOSE TO HARVEST—Malathion has high residue tolerance. Residues also disappear rapidly. Spray as close as 72 hours from harvest, without residue problems.



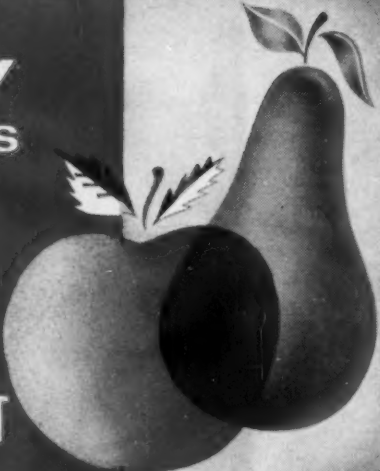
PROTECT FINISH—Many fine finish programs specify malathion because it offers a wide margin of safety to fruit and foliage of sensitive varieties.

MALATHION

insecticides have many uses on every kind of farm

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This year one phone call or visit to your Geigy dealer can help you get these three big benefits:

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- effective control of many insects attacking fruit crops.
- correction of iron or zinc deficiency in your soil.

CHLOROBENZILATE

controls most species of mites



Use Geigy Chlorobenzilate 25E (25% emulsifiable solution) or Geigy Chlorobenzilate 25W (25% wettable powder) to control Two-Spotted Mites, European Red Mites, Brown Clover Mites, and McDaniel Mites on apples and pears. Chlorobenzilate also controls Cherry Rust Mites on cherries. It is economical, has long residual action and will not affect bees under normal field conditions. Follow label directions.

METHOXYCHLOR

controls many insects attacking fruit



At the first sign of infestation use Geigy Methoxychlor "50" (50% wettable powder and dust base) to control the following tree fruit insects: Apple: apple maggots, codling moths, Japanese beetles, leafhoppers—Pear: codling moths, pear slugs—Cherry: cherry fruit flies, cherry fruitworms—Apricot, Peach, Plum & Prune: plum curculios—Quince: codling moths. Geigy Methoxychlor is safe, economical and has long residual action. Follow label directions.

SEQUESTRENE*

METAL CHELATES
 for correction of iron or zinc deficiency in soil



Use Sequestrene 330 Fe Iron Chelate for correction of iron deficiency in apple, pear, peach, citrus and avocados growing in alkaline or slightly acid soils. Apply as a soil treatment or a foliage spray. Compatible with most commonly used insecticides, fungicides and fertilizers. Use Sequestrene Na₂Zn Zinc Chelate for correction of zinc deficiency in grapes, apples, cherries, plums and peaches. Follow label directions.

*SEQUESTRENE is the brand name for metal chelates, one of Geigy Agricultural Chemicals, Division of Geigy Chemical Corporation.

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 Division of Geigy Chemical Corporation • Saw Mill River Road, Ardsley, N. Y.

THE QUESTION BOX

Don't be perplexed! Send us your questions—no matter how big or small. A three-cent stamp will bring you an early reply. Address: The Question Box, AMERICAN FRUIT GROWER, Wiloughby, Ohio.

GLYODIN SOLUTION PROBLEM

My glyodin solution has separated and even when I shake it before mixing in the spray tank, there are solid particles and sediment which do not go back into solution. Will this still be satisfactory to use?—Ohio.

The active ingredient in glyodin is a waxy solid that is dissolved in isopropanol as it is sold to the grower. Occasionally, some of the isopropanol evaporates so that some of the active ingredient settles out. However, the liquid still in the drum contains the same percentage of active ingredient that the new barrel would and would be just as effective. The solid particles will not go back into the solution because the solution is already completely saturated. We recommend to growers that they keep the drums tightly closed to prevent evaporation, but we can assure our reader that his glyodin solution is perfectly all right to use.

GRAFTING WAX

Where can I get a good grafting wax?—Illinois.

Try Bartlett Mfg. Co., 3044 E. Grand Blvd., Detroit, Mich.

PECAN MARKETING PROBLEMS

For the last five years we local growers have been selling Stuart pecans for 21 to 26 cents per pound while Schley and pecans of the same size have been going for 4 or 5 cents less. I feel that this is very low for the grower when the consumer is paying 40 cents and up. Could you inform me of a better market where we could ship pecans?—Mississippi.

One of the reasons that the Schley pecan has been selling for less is its susceptibility to damage from pecan scab whereas in most orchards the Stuart variety has been resistant. Hence, many Schley nuts produced in unsprayed orchards in areas of heavy rainfall and high humidity are of little or no value.

On the subject of the low price the grower gets as compared to the high price the consumer pays, the big difference between the prices is caused by the various harvesting, packing, and handling operations. Most growers do not have the equipment to process the nuts properly and there is generally a rather large amount of throw-outs or discards as culls from an orchard-run crop. Then the nuts have to be sized and they may be polished and dyed and then packaged and the profits of the processor, the transportation companies, and the retailers come out of the consumer price.

According to H. L. Crane, of the USDA, many of the large pecan growers turn the nuts they produce over to the Gold Kist Pecan Growers, P. O. Box 857, Waycross, Ga., for processing and sale.

FOLIAR SPRAY

How much urea should I use per 100 gallons of water for foliar spraying, and when should I apply it to my apple trees?—Ohio.

Urea nitrogen at the rate of 5 pounds per 100 gallons of water should be applied in three applications beginning with a pre-pink, a second in the full pink, and the last at petal fall, according to Dr. C. H. Blasberg, of the University of Vermont. A mature tree will require from 15 to 20 gallons or one might say that it requires 1 gallon for each bushel of fruit the tree is capable of producing.

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AUTOMATIC BAGGER

Now — with the fastest bagger — one inexperienced person can bag up to 450 bags per hour at the correct weight. Even at this fast speed, there's no bridging or jamming. V-belts on one side of the trough travel faster than those on the other side, gently placing apples in a straight line. Over-filling is prevented as belts reverse for a second when bags are filled. Easily handles 3, 4 or 5-pound bags made of paper, plastic or mesh, without adjustments.

Illustration below shows the new John Bean automatic bagger in use with its companion table. Padded table receptacles prevent unsealed bags from spilling. Space is provided for sealing operation and compartment for labels and fasteners.



OCCUPIES ONLY 3 BY 2 FEET OF FLOOR SPACE

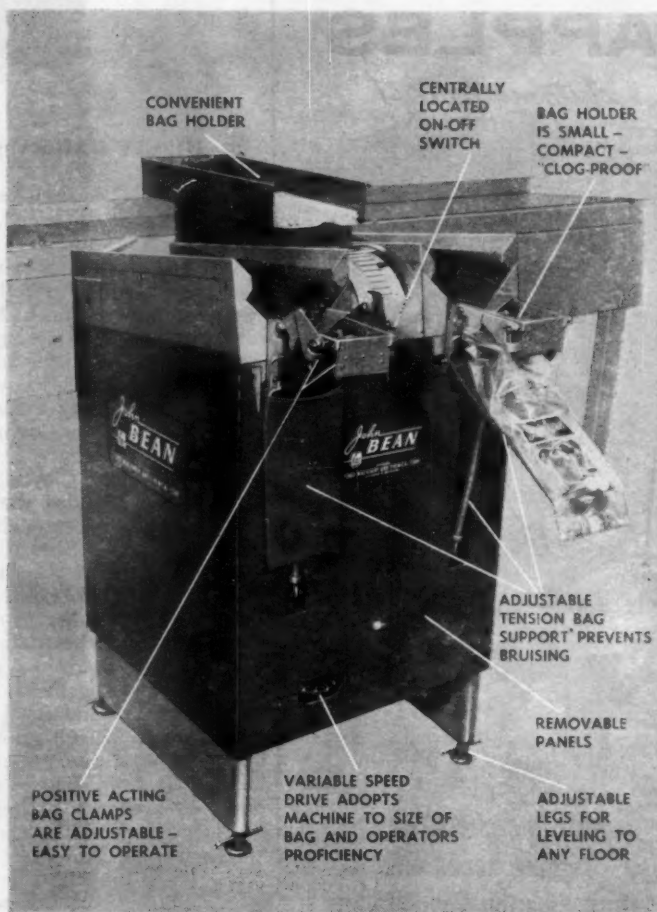
John Bean automatic bagger will save you time and money. Write for free bagger literature today. Also ask for booklet of 117 Fruit Packing Equipment plans and Catalog of Grabill Packing House Equipment.



John BEAN

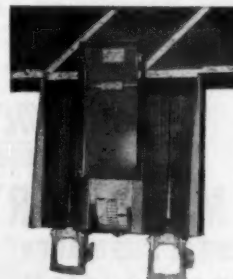
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Division of Food Machinery and Chemical Corporation



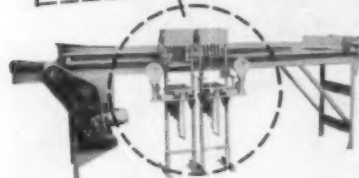
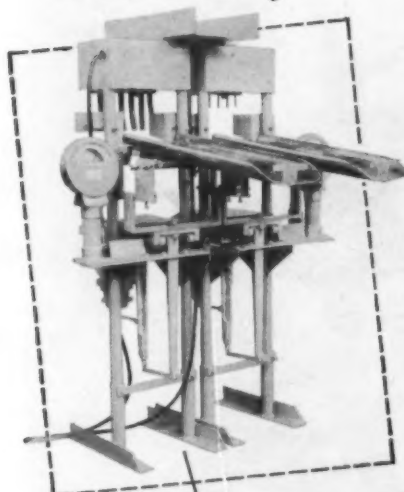
NON-JAMMING RETURN-FLOW TABLE ... EASY-TO-READ WEIGHT DIAL

John Bean's matching return-flow table maintains a constant, gentle flow of apples without jamming or bridging. Flat, adjustable shunts guide the apples into the "singulator" troughs to be bagged. Surplus apples are gently sidetracked and shunted to the troughs on the next trip. An extra-large scale indicator is placed at an ideal height to reduce operator fatigue.



NOW PREPACKAGE APPLES

Automatically!



with fmc check-way
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Return Flow conveyor tables

This combination of FMC filling stands with specially designed apple bagging heads, and the FMC return flow conveyor table guarantees you gentle, efficient prepackaging of apples with no bruising or stem puncture. The reverse belt table provides a gentle constant flow of fruit to the bagging heads. Weight is continuously accurate. Machine operation is micro-switch controlled—apples are gently rolled into mesh, or pliofilm bags. Operator simply tips the hopper, removes the filled bag and replaces with an empty bag—easily handles two hoppers for maximum output. FMC return flow conveyor tables are fabricated to fit your packing house requirements with as many dual-bagging heads as needed. Special citrus as well as universal heads (for package produce) available. Don't delay—put this automatic profit making combination to work for you. Send today for complete details.

FMC Filling stands and hoppers mount on the FMC return flow conveyor table or your existing distribution belt system.



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FLORIDA DIVISION
LAKELAND, FLORIDA**

B-4

WINDFALLS



By HENRY BAILEY STEVENS

Our Orange Tree OUR well-known fruit grower friend, E. Stuart Hubbard, of Poughkeepsie, N.Y., writes:

"For 80 years our family in Dutchess County, New York, has watered and cared for an orange tree. It stands in its pot on the lawn in summer, in the parlor in winter. For this tree has amply earned and can still reward us for loving, grateful care.

"Miss Caroline Clowes, noted animal painter, attended the first great world's fair, the Centennial at Philadelphia, in 1876. She so enjoyed an orange there that she saved seeds, raised a tree from one of them, took scions from it to her grove in Florida, budded branches, found the fruit which they bore to be superior to most of the few named varieties and named it "Centennial."

"Exhibited in fruit shows and tried by friends in their orange groves, Centennial was listed among the dozen commercial varieties by the Florida State Horticultural Society.

"Then came the great freeze of 1899. Not a branch of budwood was left alive in northeastern Florida. My father wrote to our northern home, "Cut all the budwood the tree can spare. Mail it to me to bud into the sprouts growing up from the roots of our frozen trees." And so the variety was saved.

"During the 80 years many of the brides of the family and friends have been graced with the beauty and fragrance of blossoms from this tree. It will be lovingly cared for so that it may contribute blossoms for a third generation of Hubbards and, who knows, for how many more."

Sizing a Nut Tree THE size to which some nut trees grow has impressed me both in the West and the South. C. O. Rawlings, Oregon extension horticulturist, has the record of a walnut that taped a circumference of 20 feet, 6 inches, at a height of 4 feet above ground level. Claude B. Payne of the Gold Kist Pecan Growers matches it with a giant pecan that measured 21 feet in circumference at the base. The spread of the prize walnut's

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RAINFALL**

Schedule moisture to fit crop needs. Rainfall is not enough. Let rain be supplemental. Sprinkle an acre or a square mile—at right time—with OK Champion Irrigation Pipe and Fittings. Quick automatic latching ends save time and labor. Tested to 150 pounds water pressure. Easy to set up—easy to move.

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branches was well over 100 feet, and the tree is estimated to be around 100 years old.

Pecan trees that attain a height of 120 feet with a spread of limbs of 100 to 120 feet are not uncommon in the South. This is perhaps one reason why many pecan growers hesitate to get into a spray program.

Climbing a Palm Tree FOR stately grandeur, however, it would be hard to beat the date palm. The tree has a single terminal bud, which it pushes straight up every year. You don't have to make any decisions as to where the leader will be; the tree figured that out long ago. But you need the courage of a fireman to operate a date garden. On an old tree you may ascend 50 feet before you start pruning, pollinating, picking, or tying on the big paper skirts which protect the fruit against rain damage or birds. On an average you make some 35 climbings per tree per year. Some growers attach a permanent ladder to each trunk.

Honoring an Apple Tree DESCENDANTS of the original Isaac Newton apple tree grace the grounds of both Great Britain's National Physical Laboratory and the U. S. Bureau of Standards. The American offshoot was planted with ceremony at Washington this spring. Thus, the idea celebrated in our masthead spreads among those who guard the most precious scales of measurement.

A Good Verse . . . A GOOD poem sets up a regular chain reaction. Dorothy Dumbille (Mrs. J. T. Smith), of Alexandria, Ontario, sends us the following from her volume *Stairway to the Stars*:

Sweet Voyage

All my experience; my closest hours
Associate themselves with scents of flowers,
Or trees, or meadow grass, or baking bread,
Or harness leather in a dim, old shed,
Or ripening grapes, or apples in the sun—
(I think this must be true of everyone);
Sweet potted hyacinths and daffodils
Warming the winter on my window-sills
Can send me out into the blustery street
With clapping wooden shoes upon my feet,
And tulip cups, brimming with April rain
Set windmills wildly turning in my brain,
But sweetest voyage of all; a lilac bloom
Can take me back into my mother's room!

Farm-City Week GENIAL John R. Cole, of the USDA Pecan Station at Albany, Ga., urges all orchardists to lend a hand in the promotion of the third annual Farm-City Week, developed by Kiwanis, and scheduled this year for November 22-28 with the slogan, "Partners in Progress."

Address your "Windfalls" contributions to Henry Bailey Stevens, AMERICAN FRUIT GROWER, Willoughby, Ohio.

JUNE, 1957

NEW poison ivy killer!



AMINO TRIAZOLE Weedkiller cleans up roots and all!

One spray of Cyanamid AMINO TRIAZOLE Weedkiller kills poison ivy and oak. You get *complete* kill because Amino Triazole is absorbed by the plant, travels through leaves and vines *down to the deepest roots*. Just mix with water and spray. Wait two weeks to see killing effects. Amino Triazole, used as directed, will not sterilize the soil. Easy to clean equipment. Non-corrosive. Directions on package.

ALSO KILLS CANADA THISTLE, poison oak, horsetail rush, scrub oak, quack grass, other tough perennials.

FREE LEAFLET—Ask your dealer or write: AMERICAN CYANAMID COMPANY, FARM AND HOME DIVISION, DEPT. F, 30 ROCKEFELLER PLAZA, NEW YORK 20, NEW YORK.

CYANAMID

Mulch Your Orchard
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FITCHBURG CHIPPER



Save Labor and Save MOISTURE



Right now, you can save hard summer work in your orchard by chipping tree prunings with a Fitchburg Farm Chipper, and mulch your orchard in one labor saving operation. Wood chips blown around the trunk will hold up to four times their weight in moisture. Moisture helps put your fertilizer to work and the additional moisture will carry your orchards through summer dry spells at top production.

A Fitchburg Farm Chipper is designed to work in your orchard... wherever you can drive your tractor! The high chrome steel blades need only periodic sharpening to keep their tough, keen edges. The patented spring-activated feed plate—exclusive with Fitchburg Farm Chippers—assures you of safe, one-man operation. And you have a One Year Guarantee.

For as little as \$650 you can have a Fitchburg Farm Chipper working for you in your orchard this summer; or the heavy duty brush and bedding chipper can be bought for \$960. Either will give you a good cost return in labor saving and increased fruit production.

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We have (Make and Model) Tractor

In Michigan

SPRINKLERS ON INCREASE

Irrigation pays off on tree fruits, growers have learned

By JERRY H. MANDIGO

District Horticultural Agent, Paw Paw

THE use of "sprinkler irrigation in Michigan, especially in the southwestern section, has been increasing steadily for the past ten years.

The real start came when diversified fruit growers found it necessary to invest in irrigation equipment for their berry crop in order to remain in a competitive position. In looking around for another way to profitably use their high-priced systems, they began irrigating their tree fruits.

Over the years tree fruit growers have found that supplemental water is most profitable on peaches, that it very often pays on apples, but is seldom needed on early-ripening sweet and sour cherries. A look at our weather records will explain this.

Rainfall Not Enough

The average annual rainfall is about 34 inches, of which about 19½ inches falls during the six-month growing season. During this period an acre of tree fruit will use up as much as 26 acre-inches of water, or nearly 7 inches more than is supplied by rainfall.

The three critical months of the growing season show an even more unbalanced situation between plant use and rainfall. The average rainfall during these months is 9.1 inches, while orchard use amounts to 15 or 16 inches. This is a shortage of at least 6 inches. Actual rainfall may be less than the average, of course; the actual rainfall at Paw Paw for June, July, and August, 1956, was only 7.17 inches.

The above figures show why the reserve supply of soil moisture is at the yearly high in April or early May and reaches the low point in late August and September, when water is most needed by the maturing fruit.

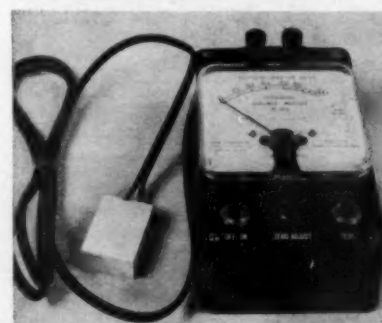
Much is being done by irrigation users and others to increase the water holding capacity of the orchard soil. Except in a few soils which promote very deep rooting of trees, however, this storage reserve often fails to make up for the deficiency in growing season rainfall.

Many of the first growers who installed irrigation systems used giant sprinklers on high standards reaching above the trees. These large guns were difficult to hold in place, required high pressure and thus high power cost, and often caused soil compaction.

Nearly all tree fruit growers are now using small to medium-sized sprinklers, and most have purchased low-angle under-tree sprinklers.

Forrest Steimle and his son, John, of Eau Claire, are typical of Michigan growers who irrigate tree fruits. They've been using supplemental water for more than 10 years on 90 acres of apples, 4 acres of peaches, 50 acres of cherries, and 30 to 40 acres of small fruit.

The Steimles have been using the Bouyoucos moisture blocks and meter to decide when to start irrigating. This measures the per cent of moisture available to plants. Recommendations have been to start irrigation



Steimle orchard in Michigan relies on the Bouyoucos field meter and soil moisture blocks.

when available moisture in the root zone is 20% in clay and 50% in sand. The Steimles have found that they should start irrigating much earlier than this, because it is impossible to cover their orchards quickly.

The Steimles apply water at a rate which the soil will absorb until field capacity in the root zone is reached. This usually means about 3 inches of water at a setting. In most years they use about 9 inches of irrigation water on apples and peaches. On cherries, which mature their crop in July, one 3-inch application per year is usually enough.

In summarizing results of tree fruit irrigation Forrest Steimle's experiences are similar to those of other Michigan growers. He says:

- 1) We have little or no trouble with small fruit size.
- 2) We believe we get a brighter, waxier, and longer-keeping apple.
- 3) Our bud set is much better, so we can and do get a heavy crop every year instead of biennially.
- 4) With plenty of water and liberal supplies of phosphorus and potash we

AMERICAN FRUIT GROWER

are able to reduce the amount of nitrogen used and get better color.

John says, "We feel so sure that we'll need extra water that we're thinking of starting an irrigation crew in June and keeping them on through the rest of the summer."

Frost Protection

Sprinkler irrigation has also shown considerable promise in frost protection. In the spring of 1956 a cherry grower in west central Michigan had

In South Carolina

SPRINKLERS ARE A MUST

Peach growers find irrigation necessary to meet market demand

By **ROY J. FERREE**

Clemson Agricultural College

IT was not until 1947 that the conventional type of sprinkler irrigation was used in South Carolina in peach orchards to supplement natural rainfall. However, as early as the mid and late 1930's a few growers realized the benefits from supplemental irrigation through the use of rather ingenious equipment.

Since 1947 the number of supplemental irrigation systems has greatly increased in South Carolina to the extent that almost 50% of the peach acreage in South Carolina last year received from one to three applications of water.

Learn from Mistakes

When sprinkler irrigation was started, there was little information on this subject available, and in the past ten years growers have encountered many problems and have made numerous mistakes.

The most important aspect of supplemental irrigation in South Carolina is the water supply. More than once irrigation equipment has been purchased and put into use before the grower realized that his water supply was inadequate. Now it has been learned that in the initial stages of planning a system competent help should be secured in appraising sources of water.

Another mistake that was made was the rate at which the water was applied. Many growers attempted to apply one acre-inch of water per hour on soil that would absorb not more than 3/10 of an inch. This resulted in a waste of water through runoff, as well as inadequate water available for use by the trees. Now absorption rates for the type of soil to which the water is to be applied are secured, and the systems are engineered accordingly.

considerable success in frost protection with under-tree sprinklers. He used 12° angle sprinklers with 3/16-inch openings spaced 60 by 60 feet. At 55 pounds' pressure at the sprinkler he applied 8 gallons of water per minute for each unit.

Check thermometers showed a temperature differential of 6 degrees between the irrigated and nonirrigated sections of the orchard. In this orchard it meant the difference between a crop and no crop. THE END.

This insures greater effectiveness of the water applied and practically no runoff.

Another problem that has been solved is the amount to put on at each application. Initially it was assumed that one acre-inch of water would be sufficient. However, experience has shown that greater effectiveness per acre-inch of water is secured through the application of a minimum of 1½ acre-inches of water, but preferably 2 acre-inches.

Because of the lack of research data and experience in this field, no definite recommendations could be made as to time of application. It has been concluded that the two most critical periods are pit hardening and beginning of second swell. It is at these times that from 1½ to 2½ acre-inches of water is applied, but it is also applied in the intervening periods if rainfall continues to be deficient.

It is pretty well an accepted fact among the peach growers in South Carolina that due to market demand the availability of supplemental irrigation is a must. Those who purchased irrigation systems as early as 1947 have utilized the systems at least once during every growing season since then except in 1955 when the crop was a total loss.

Figures indicate that production per tree when adequate supplemental irrigation is available can be increased as much as 50% and the size increased from a less desirable size to the size the market demands. This results in an increase in net profit as high as 40% to 50%.

No definite information has been secured in relation to cold hardness of buds in irrigated and nonirrigated orchards. However, the bud set in irrigated orchards is much greater than in nonirrigated orchards, thus increasing the chances of a better crop the following year. THE END.

IRRIGATION—

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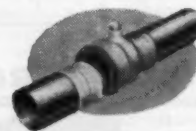
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You save man-hours and money with McDowell—the **QUALITY** irrigation couplings and fittings. Water pressure gives tight seal automatically. No tools needed. No hooks or latches to cause extra work, extra upkeep, extra expense.

THE McDOWELL COUPLING



The original, patented, automatic pressure-lock design!

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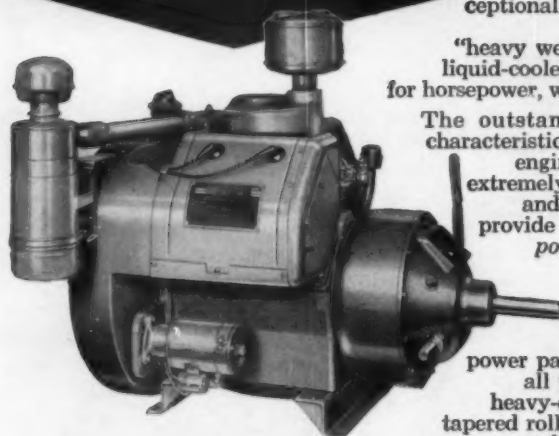
Address _____

McDOWELL MANUFACTURING CO.
Pittsburgh 9, Pa.

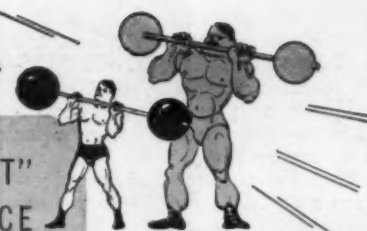
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in a light weight, man-size

WISCONSIN Air-Cooled ENGINE



Model VR4D Open Engine with heavy-duty clutch, rotating screen, electrical equipment and pre-cleaner.



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The outstanding High Torque characteristic of the Model VR4D engine, combined with its extremely rugged construction and heavy-duty stamina, provide load-lugging holding power, long life and top power performance.

Advanced "V" design provides an extremely compact power package which includes all traditional Wisconsin heavy-duty features such as tapered roller main bearings plus additional new features.

This new engine rounds out a complete line, comprising 15 models in 4-cycle single cylinder, 2- and 4-cylinder sizes, from 3 to 56 hp. Write for "Spec" Bulletin S-207.



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Sprinklers solve many growers' special irrigation problems

THE dry growing season in California makes summer irrigation mandatory in order to produce fruits and nuts of high quality.

Sprinklers are being used in orchards in Stanislaus County and elsewhere in California to help solve specific irrigation problems. Sprinkler irrigation has often been found both economical and practical in orchards and vineyards where other types of irrigation are impractical.

Hilly land above the central valleys can be irrigated very efficiently with sprinklers. Excessive runoff which causes erosion can be eliminated by a well-engineered sprinkler system.

Water Penetration

Water penetration has become one of the major problems in our irrigated agriculture. Poor penetration seems to be caused by land leveling operations and machinery used in permanent-type crops. Many of these penetration problems associated with land leveling are in both the cuts and fills. Sprinklers can be used to supply a low application rate and avoid standing water. Also, on soils where excessive cuts and fills make land leveling operations impractical, sprinklers are both economical and give a thorough job of wetting.

Where a controlled depth of water penetration is a must, sprinkler systems provide the answer. Shallow hardpan soils and those which have a high water table require very exacting irrigations. An excessive amount of water applied in either situation will bring about the death of roots by forming a perched water table or raising the existing one. A number of productive orchards growing in such potentially dangerous conditions owe their existence to a well-engineered sprinkler system.

Cost studies on walnuts, peaches, and almonds have shown in many instances that sprinkler systems have been less expensive than leveling operations. The operation and maintenance of systems in some cases are more expensive than flood-type irrigation. However, many of the soil compaction and weed problems have been avoided, and disease problems which are believed to be associated with moist conditions have been no worse than under other types of irrigation.

—By Norman W. Ross and J. L. Meyer, Farm Advisors, Modesto.

AMERICAN FRUIT GROWER

PRUNE DIEBACK

An almost-ruined orchard is restored to vigorous health

By RAYMOND COPPOCK

THE old problem of dieback in prune trees with heavy crops in certain soils has been overcome by two California growers by fertilization and chemical thinning.

Near Butte City, on an 80-acre ranch owned by August and George Boeger, of Gridley, about one-fourth of the total acreage was almost pulled after the brothers bought it two years ago. The trees ranged from 19 to 48 years in age and had suffered repeated years of dieback. The Boeger brothers and ranch manager Ed Williams launched a program to save the trees with heavy fertilization and thinning.

Since prune dieback is associated with lack of potash, they applied 25 pounds of actual potash per tree last fall, drilling it into the ground to make sure it penetrated to the root zone. The potash application is expected to last several years.

The previous spring, just to get growth going again, 150 pounds of nitrogen per acre had been applied. After the potash application a cover crop of vetch was sown and irrigated so that it had a good start before cold weather.

Last spring another 150 pounds of nitrogen in the form of urea was applied by airplane just before turning under the cover crop. One purpose was to prevent the decomposing vetch from locking up available nitrogen just as the growing season started. They plan to repeat the cover crop and nitrogen fertilizer program every year.

With the nutrition problem taken care of, the next step was to prevent overloading of the trees by an excessively heavy crop. The answer:

HAND-THINNING PEAR TREES

THERE are two ways to hand-thin Bartlett pears—and the most common way is not the best, recent USDA studies at Medford, Ore., show.

Bartletts tend to produce too many fruits for good size, and thinning the young crop lets fruits grow larger. However, a pear that is undersized at thinning time rarely becomes a large one at harvest, plant physiologists R. J. Higdon and J. H. Grim report.

The usual space-thinning practice—leaving the terminal pear and a



Prune dieback strikes just as fruit begins to size, and appears first at the tips of limbs.



Ranch manager Ed Williams looks over vigorous prune trees in orchard which appeared to be dying two years ago. He plans to prune heavily this year to keep the new growth in check.

dinitro sprays, applied at about nine-tenths bloom.

"Next time we won't try to kill quite so many blossoms," said Williams, explaining that his orchard produced only about 1½ tons of dried fruit per acre, although the fruit was of enormous size.

On Boeger's ranch at Gridley similar techniques resulted in 2½ tons per acre of good-sized prunes, 45 to the pound.

The Boegers' success in returning an almost-ruined orchard to vigorous health and good productivity in a year and a half may point the way for other California growers—especially after this year, when dieback was noted in hundreds of prune orchards in various districts. **THE END.**

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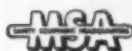


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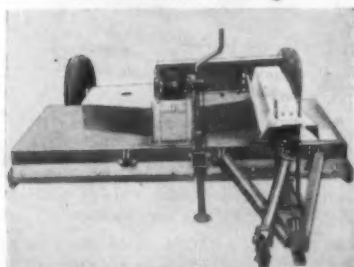
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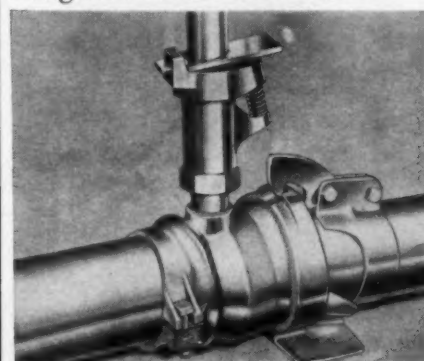
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Many of us have had to shut down an entire lateral to repair one faulty sprinkler head. With the new Ezy-Grip Riser Valve this is no longer necessary. A slight depression of the spring-action toe plate releases the riser and engages an automatic rubber ball check valve which immediately stops the water flow. Replacing the riser is equally simple. Just depress the spring-grip toe plate and the riser fits back into place and automatically opens the check valve. Write Harry Jeter, Shur-Rane Irrigation Division, P. O. Box 145, San Jose, Calif.

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One of the major sprinkler manufacturers has just developed a new line of agricultural sprinklers. The new models are light, compact, and designed to distribute water in a uniform pattern at a slow rate. Speed of rotation is simply controlled, and other special features such as tapered nozzle and fixed deflector make them ideal for the grower. The

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AMERICAN FRUIT GROWER

STATE NEWS

(Continued from page 16)

came at pink stage of apple. **NEW JERSEY**—Season appears about normal with prospects for heavy apple bloom. Good peach bloom. Blueberries normal. Strawberries a little late. **KANSAS**—Despite late freezes, prospects are good, with recent moisture further improving crop prospects. New peach plantings are showing good growth, although fruit bloom was 10 to 14 days later than usual. **IOWA**—Crop conditions look much better than they did at this time last year. Growers are looking forward to a good year. However, peach crop may be rather light due to extremely low winter temperatures. **VERMONT**—Warm temperatures in late April brought McIntosh blossom buds into full pink by April 30, about 10 days to two weeks ahead of average. Heavy bloom of all varieties is indicated, with dry weather favoring pre-bloom scab control. Application of dust materials by airplane to orchards has continued to increase. **MICHIGAN**—No severe losses reported as a result of low temperatures May 2-5. Sweet cherries were in full bloom in Grand Traverse area during this period. Peach

HARDY FRUIT VARIETIES

The story of the development of fruit varieties by the University of Minnesota Agricultural Experiment Station during the past half century has just been published as Station Bulletin 441 and is entitled, "Fruit Varieties Developed at the University of Minnesota Fruit Breeding Farm." Authors are W. H. Alderman, head of the department of horticulture and superintendent of the Fruit Breeding Farm at Excelsior until he retired in 1953; A. N. Wilcox, professor of horticulture in charge of the fruit breeding program; and T. S. Weir, associate professor and assistant superintendent of the Fruit Breeding Farm.

The 64 varieties of tree fruits and small fruits developed and introduced by Minnesota horticulturists constitute about 60% of all the fruit acreage in the state. These varieties are particularly adapted to the severe climate of the upper midwest. Most widely known and grown in Minnesota and other areas of the United States as well as Canada are the Harlowe apple, the Latham raspberry, and the Red Lake currant. Meteor and Northstar cherries, introduced a few years ago, were the first hardy pie cherries developed for this region.

trees generally were either in full bloom or just past full bloom. Crop prospects appear very good for all fruit crops pending possible frost damage.

Fruit Tree Survey

PENNSYLVANIA—The Pennsylvania Crop Reporting Service, in response to requests from growers, is making a fruit tree survey of commercial orchards.

The Pennsylvania State Horticultural Society asked that a count of apple, peach, and red cherry trees be made as soon as possible in orchards having 100 or more trees, and that the ages of the trees also be recorded. It is expected this information

OHIO APPLE GROWERS TO MEET

The Ohio Apple Institute will hold its annual membership meeting on June 27 at the Peace Valley Orchards of Don Simms & Sons near Rogers in Columbiana County. A morning tour of the orchards will be followed by an afternoon session on apple promotion and marketing. Exhibit space will be available for display and demonstration of horticultural products and equipment.

This is the first time in the 20-year history of the institute that an annual meeting will be held in eastern Ohio. In addition to Ohio growers, guests are expected from Pennsylvania and West Virginia.

Howard M. Wells, of McArthur, is manager of Ohio Apple Institute.

will serve as a guide for future planning and planting of these fruits which had a 1956 value of \$16 million.

Cost of the survey will be shared equally by the state department of agriculture and the USDA.

Free Copy

ILLINOIS—The Illinois Fruit Council has issued an attractive folder giving a pictorial account of its promotional activities. Non-members may obtain a copy of "Illinois Fruit Council Activities" by writing Harold J. Hartley, Secretary, Illinois Fruit Council, Carbondale.

Matches 'Gateway' Offer

INDIANA—The Indiana Horticultural Society executive board has set aside \$540 as a fund for matching purchases of the film "Gateway to Health." Money from this fund, in the amount of \$67.25 for each print purchased, was made available to local or county horticultural societies and individual growers. Any print purchased from this matching fund would be placed with the School Board Film Library in the county or marketing area of the local society or individual making a matched (\$67.25) purchase. Actual mechanics of film placement, and preview to school authorities, is handled by the secretary of the state society and Ken Davidson, education director, National Apple Institute.

Barely three weeks after the offer was made six prints were ordered, and it appears likely that the original fund will be oversubscribed.—George A. Adrian, Sec'y, Indianapolis.

IRRIGATION COSTS

(Continued from page 9)

a large-volume gun is used, the supply pipe line is usually moved about 200 feet to a new setting. The line can be uncoupled and picked up with a truck or a tractor and trailer. The sprinkler is then hooked in at various positions along the line. Mountings can be worked out so that one man can move the sprinkler from one setting to another.

When using under-tree sprinklers, the pipe line with sprinklers is moved as much as 40 feet to a new setting. This is commonly done by hand. A system based on two or three moves per day (morning, noon, or night) works out with the

least labor required. No one needs to be in attendance between moves.

In determining power costs, check on the comparative cost of the different types of power, keeping in mind the first cost of the installation. An irrigation system operating at low pressures will require less power than one operating at high pressures.

In figuring the cost of irrigation with a sprinkler system the initial investment and labor and power requirements are closely related. Working out the design of the system is the responsibility of the dealer, who should have the necessary training. THE END.

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Don't Take It for Granted!

LITTLE by little America is becoming alert to the importance of water. The arid portions of the West have always known this. More recently the Middle West has recognized the problem. And now it would seem that from every corner there comes evidence of an awakening to the importance of water.

But somehow, until one looks into the matter, he never fully appreciates what water means to mankind. It is not enough to know that supplemental water will mature a strawberry crop which might otherwise fail, or that forage yields can be doubled by the judicious use of water. It is more to know that only 1% of the earth's surface is irrigated, yet that that 1% provides the food for one-third of the people on the earth.

Even this is not all. It is not crops alone that need water. It is human beings and the complex manufacturing processes of modern society.

Listen: It takes 18,000 gallons of water to make a ton of iron. It takes

65,000 gallons more of water to convert this ton of iron into steel. For one 55-gallon barrel of gasoline, 7000 gallons of water are required. For 1 pound of aluminum, 160 gallons of water are used. A similar amount is required for 1 pound of rubber, and 3600 gallons per ton of coke. Not that it is worth dignifying by special comment, but 470 gallons of water are needed to make 1 barrel of beer.

A slice of bread requires 37½ gallons of water—all the way from the planted wheat seed to the finished product. A helping of potatoes asks for 1405 gallons of water, and a steer on the farm needs 3750 gallons per pound of his weight, for himself and the grass he eats.

There will be competition for water of a tremendous order one of these days. Fruit growers and farmers should not take too much for granted. It is time now to look into local water usages, water legislation, and water supplies. Someday the water may not be there.

The Importance of Little Things

ONE of the distinctive features of the fruit industry is the importance of little things.

The preceding growing season may have been favorable to fruit bud formation. The winter may have been mild and the fruit buds may have been unhurt by winter cold. The pruning and the other work may have been completed under suitable conditions. Fertilizers may have been appropriately applied, and the first spray may have gone on.

And then it happens! A few minutes of 27° on a clear night makes all the difference between a crop and no crop. The trees half way up the slope carry a full crop while those at the bottom are bare. The trees under mulch may be frosted out while the ones under clean cultivation are not—due, of course, to differences in radiation. The blossoms on a tree near a building will have survived whereas a tree a hundred feet away will be barren. Yes, just a little thing, but so very important.

The wheat grower can replant. The dairyman can look past the bull calf

that has just arrived and hope that the next will be a heifer. The fruit man must wait for another year. And this is where the fruit business differs in large measure from a lot of other businesses. Little things—throughout the year—and so very important.



Fruit Talk

Says an English publication, "Growers of apples and pears and other trees are now going to bed every night with their fingers crossed against frost—crossed so hard that some fingers risk permanent warping."

The Indiana Supreme Court has ruled that apple picking is an agricultural pursuit (in a case involving the employment of pickers by processors) and that the nature of an employee's employment is determined not upon what the employer does, but upon what the employee does.

A Canadian firm boasts that it has succeeded in producing a seamless aluminum can in its German plant, which is the prelude to an "aluminum era in canning."

For those who read German, an attractive new book on commercial fruit growing (*Marktoftbau*), with a beautiful colored apple on the cover, is from Paul G. de Haas, Institute of Fruit Culture, Hanover, Germany.

Nearly two out of every three cans of cranberry sauce on the nation's tables comes from an area of about 16,000 acres in southeastern Massachusetts.

The S. S. Tropicana arrived in New York harbor in February on a scheduled nine-day Florida-New York round trip, carrying 650,000 gallons of bulk orange juice in stainless steel tanks, from where the juice is pumped into cartoning machines, each capable of filling 140 quart cartons per minute.

A most interesting publication is authored by Mumford and Irish of Oregon State College on the cost of producing apples and pears in the Hood River Valley. For apples in 1955, the figures are 99 cents a loose box and \$1.60 a packed box, and for pears \$1.23 and \$1.36, respectively.

The new ventilated picking lug for strawberries employed by Gaston and Levin of Michigan State is being well received by virtue of the fact that it reduces bruising and cost of handling and delivers a superior product to the processor.

In the past 10 years the freight rate on fresh fruits has increased about 54%, which is less than the general increase of 89%.

W. D. Weeks of Massachusetts tells us that there are about 30,000 to 50,000 blossoms on a mature apple tree, and that if all of these developed into fruits of average size (150 to the box) the crop would be 200 to 333 boxes per tree. In general, 3 to 8% of a full bloom is enough for a crop.

The United States is the world's No. 1 commercial peach area, with production of 69 million bushels—or slightly over half of the world crop.

Europe leads the world in sweet cheery production—760,000 tons of the world's 1,120,000 tons. The United States produces 262,000 tons.

—H. B. T.

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